Installation Manual

700
710

Hidden Auto Security

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Alarm description

Introduction

This document is compatible with slave-security systems TEC-700/710 (hereinafter referred as the Alarm)

The Alarm is designed for protecting the vehicle from being stolen from its parking location and from being hijacked. The Alarm also notifies if the vehicle is being tampered with.

Owner is authenticated by enterning PIN code from vehicles buttons, for example steering wheel.

The alarm contains a built-in tilt sensor and has a connector for optional sensors

To see the list of vehicles compatible with the Alarm along with information on its functionality please use Integrator (www.tec-integrator.com).

Terms

Programming button — one of the factory (default) buttons, with which the Alarm can be programmed (buttons specific to the vehicle can be found in the Integrator). Programmable button can be changed only within short time after installation of the Alarm. Also built in button can be used as programming button.

Security — is a state of the Alarm, which is turned on after locking the doors in any way provided by the manufacturer of the vehicle (keyless entry system, remote control, rearming the alarm etc) and turning factory security system. Secure state can be left by unlocking the doors with the original remote control or vehicles keyless access system or by entering the PIN code.

Guard mode — active state of the PINToDrive® and AntiHiJack: if one of these functions has entered guard mode, to leave it it is required, to enter PIN-code, otherwise engine will be locked.

Comfort — feature allowing not only to lock doors from the factory remote, but also to raise windows (sunroof also can be closed).

Alarm functions

- Sound and visual notification if the alarm was triggered
- Built-in shock and tilt/movement sensors
- Theft protection when the vehicle is parked - PINToDrive®
- Antihijack protection - AntiHiJack.

Alarm operation algorithms

Arming/Disarming

To arm the alarm press the button of the remote, or close the doors with keyless system or lock the door with the key. Alarm will warn you that it is armed with audible signal and LED flashes. After some time interval between flashes will decrease.

To disarm the alarm press button of the remote, or open vehicle with keyless system. Alarm will warn you with 2 audible signals. LED will go off.

Emergency disarming

If remote is unavailable (for example it has low battery charge), to disarm the alarm do the following:

1. Open drivers door with key. Alarm will be triggered .
2. Turn the ignition on and enter PIN code, wait for confirmation.
3. Alarm will be disarmed.

Warning about open door

If you left an open door, hood or trunk and armed the Alarm, the system will warn you with 3 audible signals. LED will inform you about open compartment:

- 2 flashes — hood is open
- 3 flashes — trunk is open
- 4 flashes — door is open(doors).

Alarm won't warn you when the vehicle is entered through opened door. You can, without rearming, close door, hood, or trunk, and the system will take it under its control.

Alarm trigger

The alarm has 2 built-in sensors: shock sensor and tilt/movement sensor. Because of these sensors the alarm is able to differentiate different influences on the vehicle.

Optional sensor can be connected if required. The alarm can be connected to multiplex sensors and standard sensors.

In secure state alarm can react to external action by warning or by triggering. Warning will be made if small force was applied to the shock sensor. In this case alarm will make short audio signals.

Alarm will be triggered, if any door, hood, or trunk is open, if tilt/movement sensor is triggered, and if excessive force was applied to the shock sensor. Siren will be on for 30 seconds and hazard lights will blink.

You can adjust sensors sensitivity.

Public order feature

After three triggers in armed mode from one sensor in one hour alarm will stop responding to this sensor for one hour. Alarm will continue working with this sensor if there were no triggers for one hour. This function will cancel alerts but warnings will stay

Trigger check

Alarm remembers causes of alerts for security period. Memory will be cleared after ignition switched on.

If alarm was triggered, after disarming the alarm four audible signals will be made and indcation of cause will start.

Table 1. Trigger indication

LED flashes	Note
x1	Public order feature
x2	Hood was opened
x3	Trunk was opened
x4	Door(s) was opened
x5	Shock sensor (triggered)
x6	Shock sensor (warning)
x7	Tilt/movement sensor was triggered
x8	Optional sensor (triggered)
x9	Optional sensor (warning)

Arming the alarm in sensors off mode

If you would like to turn audible alert off.

1. Arm the alarm.
2. In 3 seconds press button of the remote, siren will make one long audible signal, then pause and one short signal— warning mode will switch off. Alarm will not react to warning trigger from sensors.
3. In next 3 seconds press button again — siren will make song signal, then pause and 2 more signals — all sensors will switch off

Trunk opening without leaving the security mode

You can open the trunk with remote or keyless system. While trunk is open alarm will stop reacting to sensor input, but will control doors so the vehicle will stay secured from intrusion. After trunk is close the system will secure it and turn all sensors back on.

Disarming with PIN code

Alarm can be set up so it requires PIN code to be entered to be disarmed. If PIN code wasn't entered in 30 seconds after opening any door, trunk, or hood.

PIN code is required only if alarm was armed for more than 30 seconds. To turn the alert off enter PIN code.

PINToDrive®

PINToDrive® — is a feature designed to prevent vehicle from being stolen from parking space. PINToDrive® goes into effect if ignition was switched off for more than 3 seconds. If PINToDrive® feature is enabled and active it requires PIN code to be deactivated, otherwise engine will be locked.

- Engine will be switched off on attempt to move if speed control is enabled and supported by the vehicle
- The engine will be turned off within 5 seconds after the ignition has been turned on, if the Speed control is disabled or is not supported by the vehicle.

AntiHiJack

AntiHiJack — is a function that prevents the vehicle from being hijacked or stolen from its parking area.

AntiHiJack enters the Guard mode in the following cases:

- Ignition was turned off for more than 3 seconds (if PINToDrive® is disabled; otherwise it will work by its algorithms)
- Drivers door was opened.

Upon entering the Guard mode, AntiHiJack feature goes through a sequence of phases and in case if the Guard mode has not been deactivated,the feature will activate the engine lock. Changing of phases takes place only when the ignition is on. When ignition has been turned off the Alarm will save its current condition and will continue its operation when the ignition is back on. AntiHiJacks Guard mode can be deactivated at any phase by entering the PIN code. Guard mode includes the following phases:

- *Idle phase*
- *Warning phase*
- *Locking phase*

Idle phase. In this phase AntiHiJack follows two different algorithms depending on the availability of Speed control.
If the Speed control is available, AntiHiJack waits until the vehicle covers a set distance from the moment of Guard mode activation. Upon that, AntiHiJack goes into the Warning phase. If the Speed control is not available, Idle phase consists of three stages:

- Waiting for drivers door to close
- Waiting for preset amount of brake presses to be made
- Pause before going to warning phase

Warning phase contains 2 stages:

- Warning the driver with the trill that they have to enter PIN-code.
- Warning other drivers on the road of the possible hazardous situation due to the upcoming engine locking (10 seconds). It is carried out by vehicle hazard lights. Driver warning is still on.

Locking phase. Engine lock is activated.

PIN-код

PIN-code — is a secret sequential combination of factory vehicle button(s). Please check the Integrator for the list of buttons recognised by the Alarm. PIN code is a one-, two-, three- or four-digit number. Each digit is a number from 1 to 9

PIN code can be promptly changed numerous times by technical specialists during Alarm installation or by you during day to day use (refer to page 14).

To maintain proper security level factory PIN code has to be changed.Until this is done signal will be emitted every factory PIN entry as a reminder to change it

PIN-code entry sequence:

1. Turn on ignition or start the engine.
2. Enter PIN-code.
3. Wait for confirmation trill.

- Default PIN-code – "2", has to be entered from programming button.
- It is impossible to set PIN "1" – single button press.

PIN-code examples

Buttons ◁, ▷, ⊕, ⊖, ⊖ — used here as an example. **Request the list of avaliable buttons in your vehicle at your shop** .

One button PIN

One digit PIN-code:

⊖ → ⊖

2 digit PIN-code:

⊖ **pause ~2 sec** ⊖

Multiple buttons PIN-code (please, mind the sequence)

One digit PIN-code:

◁ → ▷ → ⊕ → ⊖

2 digit PIN-code:

◁ → ▷ **pause ~2 sec** ⊕ → ⊖

PUK-code

PUK-code – 4-digit number under the scrach layer on the plastic card that came with the Alarm. PUK-code will disable all security features of the alarm. Use PUK-code only if you lost PIN-code.

Input sequence:

1. Turn the ignition on or start the engine.
2. Enter PUK-code from programming button with 2 second pause after each digit 2.
3. Wait for audio trill confirmation.
4. If you made a mistake, wait at least 3 seconds and repeat PUK-code.
5. After succesful entry of the PUK-code you may enter new PIN-code.

Maintenance mode

In this mode all antitheft and security features will be disabled. Alarm will warn that maintanence mode is enabled by:

- LED flash after disarming
- LED goes off if ignition switched on
- Warning trill after PIN-code entry
- If the ignition turned off LED will light up for some time

To turn this mode on or off:

1. Turn on the ignition.
2. Enter PIN-code.
3. Press programming button 6 times (within 10 seconds after PIN-code entry).
4. Wait for confirmation:
   - Mode turned on – 1 audio and LED signal, trill
   - Mode turned off – 2 audio and LED signal, trill.

Automatic turn off of the maintenance mode

This function will switch maintanence mode off if vehicle was driven for 10 kilometers. If maintanence mode was switched on via built it button it will not switch off automatically

If Speed Control is unavailable this feature will be disabled.

Additional functions

The alarm has additional features to raise security level.

Automatic window closing ("Comfort")

Alarm can be programmed to close all windows after arming the alarm. This feature is not supported by all vehicles. Please check Integrator.

Control of an electromechanical hood lock

The alarm allows to close hood lock when alarm is armed, and open it with PIN-code.

Central lock control

If vehicle does not have:

1. Door locking on move .
2. Door unlock on Ignition off.

This can be done with the alarm.

This feature is not supported by all vehicles. Please check Integrator.

Control of a parking system

The alarm can control parking sensors in variety of ways. There are 3 operation modes

Connection

Outputs are described in table 2. Configuration of inputs and outputs can be made through built in menu – check "Menu 1".

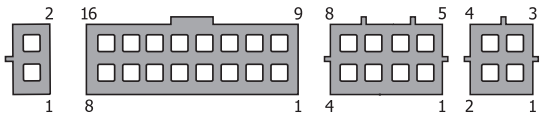


Рис. 1. Connector pin numeration from harness viewpoint

Table 2. Alarm connectors description

Connector	#	Colour	Type	Note	Current, mA
16-pin	1, 2	–	–	–	–
	3	–	–	–	–
	4	Gray/black	Input (–)	Reference ground/Negative button	0,5
	5	Pink/Green	Programmable input (+)	Stop signal control	1,5
	6	Brown	CAN	Data bus CAN-L	–
	7	White/black	Output (–)	Wired engine lock	150
	8	Black	Power	Ground	–*
	9, 10	–	–	–	–
	11	Blue/red	Programmable output(+/–)	Turn signals alternate control	±150
	12	Gray/yellow	Input (+)	Analogue buttons/Positive button	0,5
	13	Green/black	Programmable input (–)	Hood position control	1,5
	14	Brown/red	CAN	Data bus CAN-H	–
	15	Pink/black	Output (+/–)	Siren Control (+)/Horn control(–)	1300/150
	16	Red	Power	+12 V	1500/3,5**
8-pin	1	Orange/green	Programmable input (–)	Disable alert if trunk is open	1,5
	2	Orange/white	Programmable input (+)	Disable alert if trunk is open	1,5
	3	Blue/yellow	Programmable output (–)	Starter and diagnostic bus lock	50
	4	Green/yellow	Programmable output (–)	Time channel («Comfort»)	50
	5	Yellow/white	Programmable output (–)	Front parking sensors control	150
	6	Green/white	Programmable output (–)	Rear parking sensors control	150
	7	Green	Programmable output (–)	Impulse to close hood lock	150
	8	Blue	Programmable output (–)	Impulse if PIN-code is entered	150
4-pin	1	Red/white	Sensor power	+12 V	–
	2	Black/yellow	Sensor power	Ground	–
	3	Gray/Blue	Input (–)	Multiplex input #1 (Factory default)/ Sensor trigger input	–
	4	Gray/Green	Input (–)	Multiplex input #2 (Factory default)/ Sensor warning input	–
2-pin	1	Blue	LED power	Ground	–
	2	Red	LED power	+12 V	–

* Useful current of outputs depends on the load connected to negative outputs. ** Current draw in idle and operation modes can change depending on current draw on positive outputs.
Outputs #7, 11, 15 (16-pin connector) and outputs #3-8 (8-pin connector) are protected from short circuit, inductive eruptions, overheating and maximum current surpassing.

16-pin connector description

Pin #3. "Connection channel". Has to be connected to switched or non-switched circuit of the vehicle. +12 V signal has to present in chosen circuit if the engine is running. After installation please, check the link between relay and the Alarm.

Please, do not connect "Connection channel" to the cigarette lighter circuit.

Pins #4 and #12. "Reference ground/Negative button" и "Analog button/Positive button". Depending on chosen control button type one of the following functions is used:

- "Negative button" and "Positive button" — connects though any normally open non fixed buttons to the ground and +12V. Used if there are no factory buttons "seen" by the alarm.
- "Analogue button" — connects to the wire at the spiral contact at the steering wheel (check Integrator)
- "Reference ground" — connected if analogue button is selected (check Integrator).

If the vehicle has buttons, controlled via CAN and avaliable to the alarm, this inputs may not be used.

Pin #5. "Stop signal control". Used if there is no information in CAN bus about brake pedal state (check Integrator). Input #5 connect to the end switch of the brake pedal.
Pin #6, 14. Data bus CAN-L, CAN-H. Connects to the CAN bus of the vehicle (check Integrator).
Pin #7. "Engine lock". Connects to the relay that is used to prevent the engine from launching.
Pin #8. "Ground". Connects to the vehicles body in the area determined by vehicle manufacturer for OEM connection.
Pin #11. "Turn signals alternate control". Used to control hazard lights in vehicles where CAN bus is not avaliable. For list of vehicles that require this connection please refer to Integrato
Pin #13. "Hood state control". Used if CANBus contains no information about hood state.
Pin #15. "Siren control / Horn control". Required algorithm is set when installing the Alarm .
Pin #16. "Power". It is connected through 3A fuse to any non-switched +12V circuit.

CAN bus parameters indication

Geature shown following parameters:

- Hood, trunk, doors (each door individually)
- Ignition switch state (key presence, ACC, IGN, Start)
- Engine is running
- Gearbox state (for automatic – P, R, N, D; for manual – R)
- Parking brake
- Stop-signal
- Security
- Factory security system alert
- Central lock state
- Sensors ignore
- Engine RPM
- Engine temperature

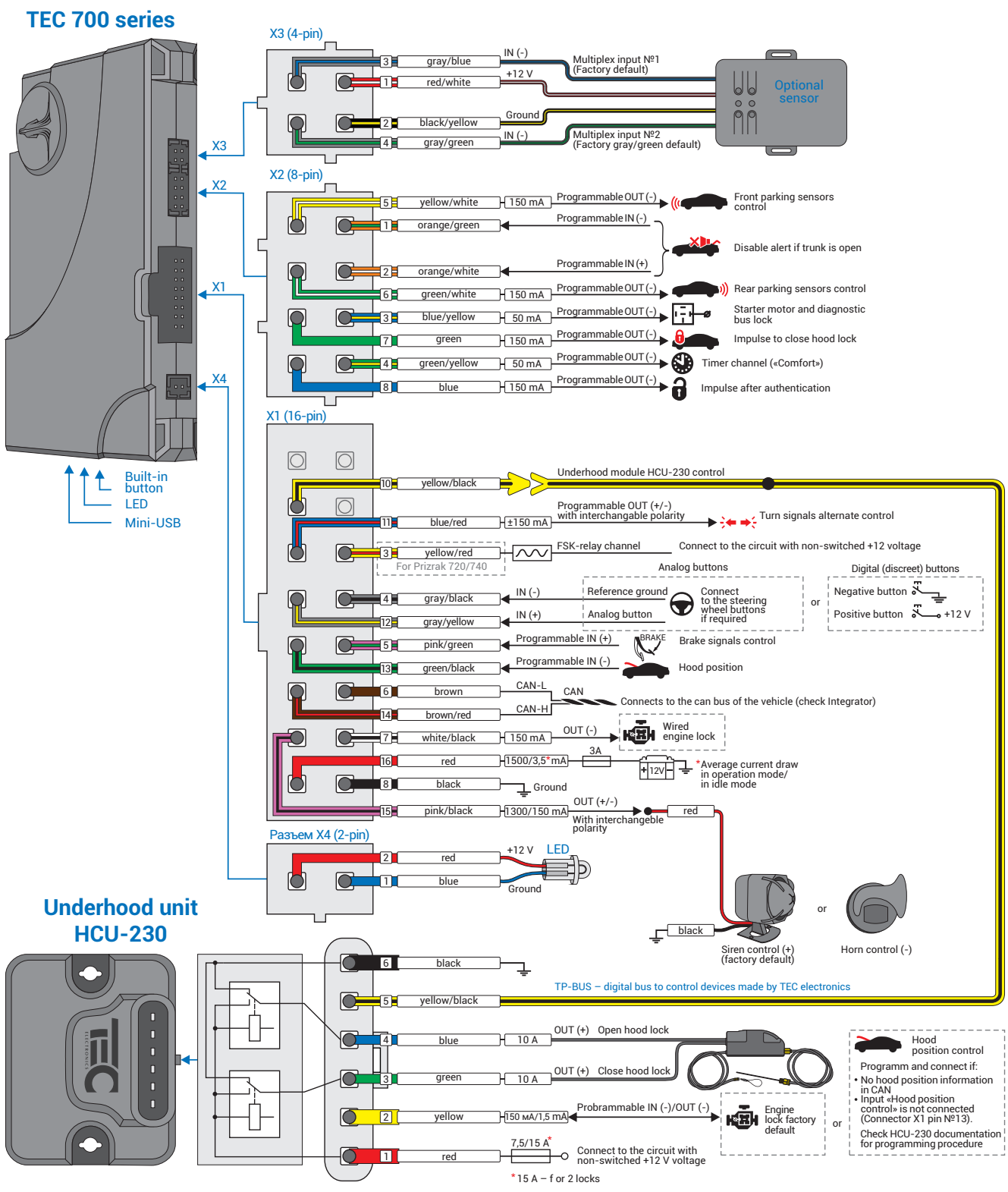
Feature allow quickly check vehicle state and adjust connection if required. Buit-ib LED is used for indication (check "Connection scheme"). LED lights up if any parameter is selected and stays for 5 seconds or until other parameter is chosen.

"Engine RPM" and "Engine temperature" will be indicated if no other parameters are chosen:

"Engine RPM" — LED flashes with frequency proportional to the RPM: 1 flash per second equals 500 RPM of the engine.

"Engine temperature" — LED flashes 1 time every time new data received (with ignition or or the engine running).

Connection scheme



Alarm programming

Programming – Stage one

The Alarm is programmed by using the Programming button.

Identifying the vehicle model

Vehicles supported by the system are divided into groups, each of which is divided into subgroups. All groups and subgroups are assigned with a number (see the Integrator). Identification is the procedure of detecting group and subgroup of the vehicle by the system.

There are two ways to identify the vehicle:

1. Automatic identification.

After connecting with the vehicle CAN bus, supplying power, and performing a few simple actions (for most vehicles those are the ignition on/off and close/open the cenral lock via original remote control) group and subgroup will be detected automatically. The user verifies identified group and subgroup by listening to the sound signals (group number – pause, subgroup number – pause).

Identification procedure for all supported vehicles can be found in the Integrator.

If the group number is a two-digit number, each digit will be identified individually. For example, group 35 and subgroup 2 will produce the following sequence of sound signals:
3 long signals – pause (1 sec), 5 long signals – pause (2 sec), 2 short signals – pause (4 sec), etc.

2. Forced interfacing.

This is used in extraordinary cases. Programming is carried out with the integrated button. Before interfacing the vehicle group must not be identified and the CAN bus must not be connected. The Alarm will leave the programming mode if the Programming button is not pressed for longer than 60 seconds.

Programming sequence:

1. Power the Alarm, wait for an intermittent sound.
2. Enter "Menu 1": press and release the Programming button 10 times (this has to be done within 10 seconds after the system has been powered). If all actions were performed correctly, the Alarm will make three audio signals.
3. Enter Menu option 1 (Vehicle model) by pressing the Programming button once. The Alarm will notify of the selection of this option by repeating single audio signal.
4. Enter the vehicle group number by pressing the Programming button corresponding number of times (see the Integrator).
5. Enter the vehicle subgroup number by pressing the Programming button a relevant number of times (please see the Integrator files).

If the group number is a two-digit number, enter the first digit, wait for 2 seconds, and then enter the second digit. The Alarm system will emit a sequence of audio signals indicating the group number.

By listening to audio signals, verify that the vehicle model was selected correctly:

- If the model was selected correctly, press the Programming button once. Signal sequence will stop, and the vehicle model will be saved
- If the vehicle was identified incorrectly, press the Programming button twice. Repeat programming starting from step 4.

Analog steering wheel buttons programming

To program analog steering wheel buttons:

1. Right after the Alarm identifies the model, turn the ignition on and wait for at least 5 seconds
2. Press all the steering wheel and steering wheel column joysticks buttons (cruise control, central unit control, etc.) sequentially (one after another). Sound after button press means that this button was recognized.
3. Turn the ignition off; a trill will sound
4. Turn the ignition on
5. To assign the Programming button from available buttons, push it and hold for at least 5 seconds (until you hear an audio signal).

Digital button programming

To use digital button (positive and/or negative):

- Set the Alarm to operate with digital buttons (Menu 1. Option 4) note that this menu option can be modified only by using a built in button and before the PIN code was entered for the first time via using analog or digital buttons. Any further modifications will possible only after system reset)
- Assign activated button as the Programming button: turn the ignition on, push the button and hold it for at least 5 seconds (until you hear an audio signal).

Button have to be programmed within 15 minutes after interfacing the Alarm. If these 15 minutes have passed, initiate the reset sequence, and perform programming steps again.

Programming – Stage two

On seconds stage configuration of the hardware and user features is made. There four independent menus (table 3).

The alarm is equipped with mini-USB (check "Connection scheme"), for configuring and updating built in software via PC and TECprog software (www.canbus-alarm.com). Configuring can be made before and after installation.

Table 3. Programming menu

Name	Menu code	Audio signals	Note
Menu 1	10	3	Hardware features configuration
Menu 1.2	11	6	Programmable Inputs/Outputs configuration
Menu 2	12	4	User features configuration
Set up built-in sensors	8	5	Shock and tilt/movement sensors configuration

Hardware features configuration

Hardware features configuration «Menu 1» и «Menu 1.2».

Menu 1. Hardware features configuration

#	Option	Range	Factory default	Note
1	Vehicle model	–	–	–
2	Engine lock	1-4	2	Output #7 set to: 1 – control of a normally open relay; 2 – control of a normally closed relay; 4 – starter motor and diagnostic bus lock
3	–	–	–	–
4	Type of external buttons	1-2	–	1 – analogue buttons; 2 – digital buttons. Inputs #4, #12
5	Hazard lights control algorithm	1-5	–	Sets up automaticaly, if required manually 1 – pulse negative; 2 – status negative; 3 – pulse positive; 4 – status positive; 5 – lights control (negative)
6	Siren control/Horn control	1-2	1	Select operating mode and polarity of output #15 1 – Siren control. Emitting constant level signal (+12V). 2 – Horn control. Emitting intermittent negative signal. Controls the original horn of the vehicle

7	Time interval of Timer Channel (Comfort) feature	1-6	3	1 – 10 c; ... 3 – 30 c; ... 6 – 60 c
8	Optional sensors multiplex mode	1-2	1	1 – multiplex operating mode of external sensors 2 – standard (sensor has 2 outputs for warning and trigger) operating mode of external sensors
9	–	–	–	–
10	Connection check between main unit and relay (only for TEC-720)	–	–	Required to perform after installation of the Alarm and relay
11	–	–	–	–
12	–	–	–	–
13	Parking system activation algorithm	1-3	1	1 – not in use; 2 – RFID check when disarming; 3 – stock remote lock; 4 – stock remote lock in high risk locations
14	Parking system button	–	–	Any avaliable button can be used (CAN, digital or analogue)
15	Speed control (except TEC-700)	1-2	1	1 – enabled; 2 – disabled. Engine lock algorithm for PINToDrive® and AntiHiJack
16	–	–	–	–
17	Alert delay if perimeter was breached	1-5	1	1 – disabled; 2 - 0.5s; 3 – 1.0-s; 4 – 2.0s; 5 – 3.0s;
18	Engine lock via CAN	1-2	2	1 – enabled; 2 – disabled. If feature is enabled and supported by the vehicle(check Integrator) - engine can be locked via CAN bus (without additional connections)

Option #13. "Parking system operation algorithm":

- "Activation by reverse gear". Front and rear parking sensors are switched on when gearbox is in R position or by using a control button. They are switched off when the speed exceeds 15 km/h or by using the parking system control button
- "Activation by speed". Front parking sensors are switched on if the vehicle speed is under 15 km/h. Rear parking sensors are switched on if the vehicle moves backwards with a speed under 15 km/h. In this mode all parking sensors can be disabled by using a control button until the next ignition sequence or command from a control button
- "Activation by reverse gear with a shutdown override". Here algorithm is similar to "Activation by reverse gear". However, when parking sensors are disabled by using a control button, they will not be activated when gearbox is in R position up to the next ignition or command from a control button..

Menu 1.2. Programmable Inputs/Outputs configuration

#	Connector	Option	Factory default	Range
1	16-pin	Output #11 (+/-)	Turn signals alternate control	1-27
2		Output #11 polarity	Negative polarity(LED off)	–
3	8-pin	Output #3 (-)	24 – Starter and diagnostic bus lock	1-27 (Functions of programmable outputs)
4		Output #4 (-)	23 – Timer channel («Comfort»)	
5		Output #5 (-)	17 – Front parking sensors control	
6		Output #6 (-)	18 – Rear parking sensors control	
7		Output #7 (-)	25 – Impulse to close hood lock	
8		Output #8 (-)	4 – Impulse after authentication	
9	16-pin	Input #5 (+)	1 – Stop signal control	1-10 (Functions of programmable inputs)
10		Input #13 (-)	2 – Hood position state	
11	8-pin	Input #1 (-)	7 – Alert delay if trunk was opened	
12		Input #2 (+)	7 – Alert delay if trunk was opened	

Options ##1, 3-8. Used to make a custom output configuration by assigning one of the 27 functions to any output.
Option #2. Polarity can be set only of this input has one of the 27 functions assigned.

Options #9-12. Used to make a custom input configuration by assigning one of the 10 functions to any input.

Table 4. Programmable inputs options

#	Name	Note
1	Brake lights state	This function is used only if the vehicle CAN bus does not contain brake pedal position data. In this case brake light control input is to be connected with brake pedal end switch output.
2	Hood position state	This function is used if the vehicle CAN bus does not contain hood position data. In this case hood control is to be connected with hood end switch.
3	Door state	This function is used in exceptional cases, when CAN bus does not contain door position data (please, check Integrator).
4	Central Lock is closed (status)	This function is used in exceptional cases, when CAN bus does not contain Central Lock status (please see the Integrator files).
5	Central Lock is open (status)	
6	Ignition	The function is used only in cases when the correct data from CAN bus is not available. This situation may occur when some circuits of the vehicle are blocked. In this case the Ignition control input has to be connected to the vehicles wire that has a constant level signal when the ignition is on. Connecting this input wil not cancel ignition analysis via CAN bus. The ignition is assumed to be on when data is received by any channel(CAN bus or analog input).
7	Trunk state control	The function is used in case an alarm is triggered when the trunk is opened via original remote control and/ or keyless access system. In this case Trunk opening control input is to be connected to trunk opening feed control wire. Input control is available only in Security mode. When a command to open the trunk is detected, the Alarm ignores external sensor inputs and trunk terminal switch for 5 seconds until the actual opening of the trunk. In 5 seconds after the trunk lid has been closed, sensor inputs and the trunk will be secured
8	Parking system button	The function controls parking sensors by using accessory button (this may be required if there are no buttons in the vehicle detected by CAN bus)
9	Wake CAN bus	This function is used in exceptional cases (please check Integrator).
10	–	–

Table 5. Programmable outputs options

#	Name	Note
1	Security state	Emitting a constant level signal while the Alarm is in Security mode
2	Arming pulse	Emitting 0.8 sec pulse when entering the Security mode or triggering AntiHiJack feature.
3	Disarming pulse	Emitting 0.8 sec pulse when leaving the Security mode.
4	Authentication pulse	Emitting 0.8 sec pulse after PIN code is entered or in Maintenance mode (1 second after the ignition has been turned on).
5	Factory alarm panic	Emitting of a constant level signal when the original alarm system (if installed) is in alert condition..
6	Beeper panic	Emitting a 30 sec constant level signal in Security mode if one of the main zones (doors, hood, trunk) is triggered or any sensor is triggered. The signal stops after exiting the Security mode.
7	Horn panic	Emitting a 30 sec pulse signal in Security mode if one of the main zones (doors, hood, trunk) is triggered. Signal is also emitted when arming/disarming. This function can be used for the vehicles without any integrated original alarm system. The signal stops when exiting the Security mode. This function can send an alarm signal to original horn of the vehicle.
8	Doors, hood and trunk	Emitting a constant level signal if any of the preset doors, hood or trunk is triggered.
9	Sensor ignore	Emitting a constant level signal in the Security mode if the trunk is opened via original remote control. The signal is also emitted for the purposes of Comfort feature. This function can disable sensors to prevent false alarms.
10	Factory buttons	Emitting a constant level signal when pressing a preset button of the vehicle.
11	Ignition	Emitting a constant level signal when the ignition is turned on (including the engine startup).
12	ACC	Emitting a constant level signal when ACCs of the vehicle (1st key position; for some vehicles it matches the ignition position) are on. The signal stops only after the key is out of the ignition lock. This function can help to correctly manage power supply to an accessory alarm system of multimedia system.
13	Engine is running	Emitting a constant level signal when the engine is on.
14	Engine RPM	Emitting an pulse with a pulse frequency in proportion with the engine crankshaft rpm. 1 pulse per second corresponds with 20 rpm of the crankshaft. The signal helps to evaluate the rpm rather than give an exact value.
15	Gearbox state	Emitting a constant level signal if transmission handle is in preset position (P, R, N, D1)). For semi-automatic transmission positions R, N, D 1); for manual transmission only position R.*
16	Vehicle is moving	Emitting a constant level signal if the speed exceeds some threshold value (the speed value is different for each vehicle, but generally it is in the range of 5 to 10 km/h).
17	Front parking sensors control	Emitting a constant signal level in accordance with the preset algorithm of the parking system.
18	Rear parking sensors control	
19	Movement speed	Emitting a pulse with a pulse frequency proportional with the vehicles speed. 1 pulse per second equals to 1 km/h. The signal helps to evaluate the speed rather than give an exact value.
20	Brake	Emitting a constant level signal when the brake pedal is pressed.
21	Hand brake	Emitting a constant level signal when parking brake is enabled.
22	External lights	Emitting a constant level signal when external lights are on.
23	Timer channel (Comfort)	Timer control channel; 10 to 60 seconds. Step is 10 seconds
24	Stater and diagnostic bus lock	Constant signal is formed while the CAN is active and PIC was not entered; If AntiHiJack is active.
25	Close the hood pulse	0.8 second impulse: when alarm goes intoo the Security mode; if the engine was locked. Impulse is not created if the hoodis open
26	Parking system LED	This function indicates the parking system status. If parking sensors are operated by "reverse gear" algorithm or "by reverse gear with an override" algorithm, LED is on when sensors are on. If parking sensors follow "activated by speed level" algorithm, the LED is on while sensors are disabled.
27	–	–

*All lever positions used for forward movement of the vehicle (D, S, M, L, etc.).

Programming sequence

1. Turn on the ignition.
2. Enter PIN-code, wait for confirmation.
3. To enter Menu 1 press the Programming button 10 times, the Alarm will emit three audio and three LED signals. To enter Menu 1.2 press the Programming button 11 times: the Alarm will emit six audio and light signals.
4. Select menu option by pressing and releasing the Programming button the number of times matching the number of option. The Alarm will confirm the option number by a series of audio signals.
5. Go to option setting by pressing and holding the brake pedal. The Alarm will notify of the option status by a series of audio signals of a changing duration.
6. Adjust option settings by pressing the Programming button the number of times matching the number of steps from the current status to the required one (for example, to go from function #2 (Arming pulse) to function #16 (Vehicle is moving), press the Programming button 14 times). The Alarm will confirm the selected function by audio and visual signals. Please remember that from the last function the program will go to the first one. Release brake pedal to switch indication from status to the number of current menu option. Now you can move to programming the next function or exit the programming mode.
7. Programming algorithm for function #8 – Doors, hood and trunk.
   - 7.1 Set any combination of doors, hood and trunk, which when opening will emit a signal at a programmable output. For the purposes of this description, doors, hood and trunk are referred to as doors.
   - 7.2 With the brake pedal pressed go to option 8. The Alarm will emit 2 successive series of 8 audio signals, and then will emit irregular audio signals. After hearing the latter release the brake pedal. The Alarm will continue to emit irregular signals. Open those doors, which are to be indicated by this output. Other doors should be kept closed (doors can be opened in advance). Press the brake pedal again. The Alarm will inform of the status by series of 8 signals, and the doors will be assigned to this output. If you do not press the brake pedal and abort programming, the Alarm will save previous settings. Release the brake pedal, and the Alarm goes back to displaying the option number.
8. Programming algorithm for function #10 – Factory buttons
   With the brake pedal pressed go to option 10. The Alarm will emit 2 successive series of 10 audio signals, and then will emit irregular signals. While still holding the brake pedal, press the required button (please refer to the Integrator files

for the list of buttons for each specific vehicle model). If the Alarm recognized the button, it will stop emitting irregular signals and go back to indicating option status by series of 10 signals. Release the brake pedal, and the Alarm goes back to displaying the menu option number. If you release the brake pedal before assigning a button, the Alarm will exit this option, save previous option settings, and go back to indication of the option number.

9. Programming algorithm for function #15 – Gearbox state»
   With the brake pedal pressed go to option 15. The Alarm will emit 2 successive series of 15 audio signals, and then will emit irregular audio signals. While still holding the brake pedal, switch the transmission to required position: P, N, D* or R (transmission selector can be set in the necessary position in advance). For automated transmission switch to R, N, D*, and for manual transmission you can only switch to R. Release, then press again the brake pedal. The Alarm will stop emitting irregular signals and go back to displaying the option status by series of 15 signals. Release the brake pedal, and the Alarm goes back to displaying the menu option number. If you do not press the brake pedal and abort programming of this option, the Alarm will save previous settings.
10. Programming algorithm for assigning a parking control button
    With the brake pedal pressed go to option 14 – Menu 1. The Alarm will start emitting irregular audio and light signals. Press and hold the selected button for a certain amount of time (if the Alarm recognizes the button, the system will stop emitting signals while the button is pressed):
    Short button press – hold the button for at least 2 seconds
    Long button press (2.5 sec) – hold the button for 2 to 5 seconds. Status control – hold the button for at least 5 seconds. Release the button, and the Alarm will emit one audio and light signal and stop the displaying. Release the brake pedal, and the Alarm goes back to displaying the option number.
11. In order to move to programming next menu option press and release the Programming button for the number of times necessary for navigation from the required option (for example, in order to navigate from option #2 to option #8 press and release the Programming button 6 times). Please note that when navigating menu options, the first option follows the last one.

Exiting the programming mode. The Alarm will exit programming mode and save all configuration settings in energy independent memory when the ignition is turned off or within 60 seconds after last menu action if the brake pedal is released.

Configuration of built-in sensors

Table 6. Configuration of shock sensors and tilt\movement sensor

#	Function	Range	Factory default	Notes
1	Shock sensor warning perimeter	0-8	4	0 – perimeter switched off 8 – maximum sensitivity
2	Shock sensor trigger perimeter	0-8	4	0 – perimeter switched off 8 – maximum sensitivity
3	Tilt/Movement sensor	0-8	4	0 – perimeter switched off 8 – maximum sensitivity

Programming sequence

1. Turn on the ignition.
2. Enter PIN code, wait for confirmation.
3. Press and release the Programming button 8 times. The Alarm will emit five audio and light signals;
4. Choose required option by pressing and releasing the Programming button a number of times matching a number of option. The Alarm will indicate the number of option by series of audio and light signals.
5. To program the selected option press and hold the brake pedal. The Alarm will notify of the option status by a series of audio and light signals of a changing duration.
6. Adjust option settings by pressing the Programming button the number of times matching the number of steps from the current status to the required one. The Alarm will confirm the selected function by audio and visual signals. From the Last function the program will cycle to the first one.

The Alarm will leave programming mode and save all settings when the ignition is turned off while brake pedal is released or within 10 seconds after last menu action if the brake pedal is released.

For efficient and convenient built-in shock sensor test, it is possible to temporarily exit the configuration mode. To do this, press and hold the brake pedal and turn off the ignition while configuring any of the zones. When the ignition is off no trill sound will be made. Check the sensor in operational mode. When you temporarily exit the configuration mode, windows are not closed automatically; otherwise the Alarm is operated in standard mode. When the ignition is on, the system automatically goes back to the point in configuration process before the exit. If you do not go back to configuration mode within 10 minutes (by turning on the ignition), the Alarm system will save the previously set sensitivity of the sensor and exit automatically. You will hear a trill.

Configuring user functions

Menu 2 . User features

#	Name	Factory default settings	On		Off	
			LED	Number of audio signals	LED	Number of audio signals
1	PINToDrive® (except TEC-700)	On	On	1	Off	2
2	AntiHiJack (except TEC-700)					
3	Distance for enabling AntiHiJack (except TEC-700)	1	Range from 1 to 10: 1 – 100 meters;...10 – 1000 meters Distance before engine lock.			
4	Siren operation when alarm is triggered	4	Range from 1 to 4: 1 – siren is disabled; 2 – siren won't be enabled on warning; 3 – warning signal volume equals arming/disarming volume (refer to function #11); 4 – siren is enabled (Maximum volume)			
5	Audio notification that PIN code is being awaited after disarming	Off	On	1	Off	2
6	Audio confirmation of authentication by PIN-code	On				
7	Automatic deactivation of maintanence mode					
8	Close central lock while driving	Off				
9	Open central lock if ignition is off					
10	Automatically close windows ("Comfort")	On				
11	Volume of arm/disarm notifications	4	Range 1 to 4: 1 – silent arm/disarm; 2 – minum volume level; 3 – medium; 4 – maximum			
12	Disarm by PIN-code notification	Off	On	1	Off	2

Programming sequence

1. Turn on the ignition.
2. Enter PIN code, wait for confirmation.
3. To enter the Alarm configuration menu press the Programming button 12 times (do it not later than 10 seconds after entering the PIN code). The Alarm will confirm it with 4 audio and light signals.
4. Select menu option by pressing and releasing the Programming button the number of times matching the number of option. The Alarm will confirm the option number with a series of audio and light signals
5. Go to option setting by pressing and holding the brake pedal. The Alarm will notify of the option status with a series of audio signals.
6. Adjust option settings by pressing the Programming button the number of times matching the number of steps from the current status to the required one. Please remember that from the last function the program will go to the first one.
7. Release brake pedal. Now you can move to programming the next function or exit the programming mode.
8. Go to configuring another option by pressing the Programming button the number of times matching the number of steps from the current status to the required one. For example, to go from option 2 (AntiHiJack feature) to option 8 (Activation of Central Lock while driving), press the Programming button 6 times.

You can exit programming mode at any moment by turning off the ignition. If no actions were taken within 60 seconds and brake pedal was released, the Alarm will exit programming mode. A trill will sound.

Change PIN-code

1. Turn on the ignition.
2. Enter PIN code, wait for confirmation.
3. Press the Programming button 14 times. The Alarm will confirm it by 1 audio and light signal.
4. Set the new PIN code by using any combination of buttons. Pressing is confirmed by the audio and light signals..
5. Wait for confirmation by 1 audio and 1 light signal.
6. Re-enter the new PIN code.
7. Wait for confirmation:

- 2 audio and light signals and a trill mean that the PIN code has been changed and the Alarm has left the PIN code changing mode
- Sound alert means that the PIN code has not been changed: a mistake has been made when entering the new PIN code, and it is necessary to repeat the procedure of changing the PIN code starting from step 4.

You can exit the PIN code changing mode anytime by turning the ignition off.

It is impossible to set PIN equal to 1; 1 - press on the button.

Change programming button

1. Reset all settings to factory defaults.
2. Interface the Alarm with the vehicle.
3. If analog steering wheel buttons are used, please define them (see above for the description of this procedure).
4. In order to assign any of the buttons perceived by the Alarm as the Programming button, press the selected button and hold it for longer than 5 seconds until a long audio signal will be heard.

he Programming button can be assigned within 15 minutes after interfacing the Alarm with the vehicle.

Programming example

Example 1

Objective: You would like to change the factory settings of the Alarm and set output #2 Engine lock to control the normally open relay.

Sequence:

1. Turn the ignition on.
2. Enter PIN code and wait for confirmation.
3. Enter Menu 1 by pressing and releasing the Programming button 10 times. If you have performed all the actions correctly, the Alarm will notify you with 3 audio and light signals.
4. According to "Menu 1", select option 2 – Engine lock – by pressing the Programming button 2 times. The Alarm will inform you about chosen menu option number by a series of 2 audio and light signals.
5. Enter option 2 by pressing and holding the brake pedal. The Alarm will show option setting by a repeated double audio and light signals because the current (factory set) option setting is normally closed relay control.
6. Select the normally open relay control by pressing and releasing the Programming button 3 times. The Alarm will inform you about chosen menu option with series of 1 audio signal.
7. Exit programming mode by turning the ignition off.

Reset to the factory default settings

The Alarm has a procedure of resetting the programmable settings, when all settings of the vehicle model are removed from the Alarm permanent memory, and PIN code and all other programming options are returned to factory set values.

To reset to the factory default settings if the Alarm is installed:

1. Disconnect power supply from the Alarm.
2. Press and hold the built-in button (see "Connection scheme").
3. Connect the power supply while holding the button. The Alarm will emit dashed audio signal.
4. Release the button and wait until the dashed signal stops.
5. Turn on the ignition. Enter PIN-code, a trill will be made.
6. A signal will notify you that the Alarm was reset to factory default settings.
7. Disconnect the power source and CAN bus from the alarm.

If the Alarm was not installed in the vehicle:

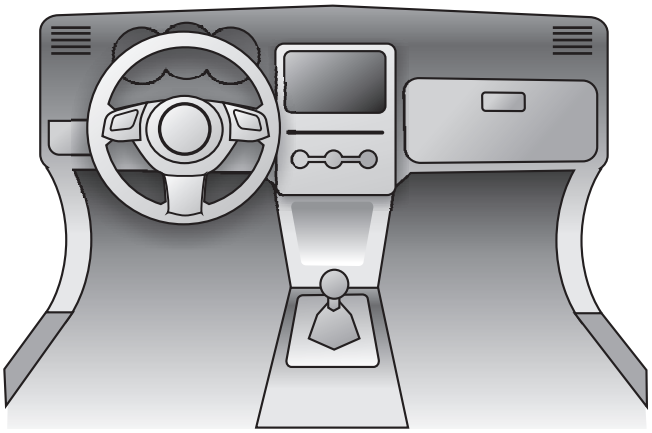
There are 3 ways to reset the alarm:

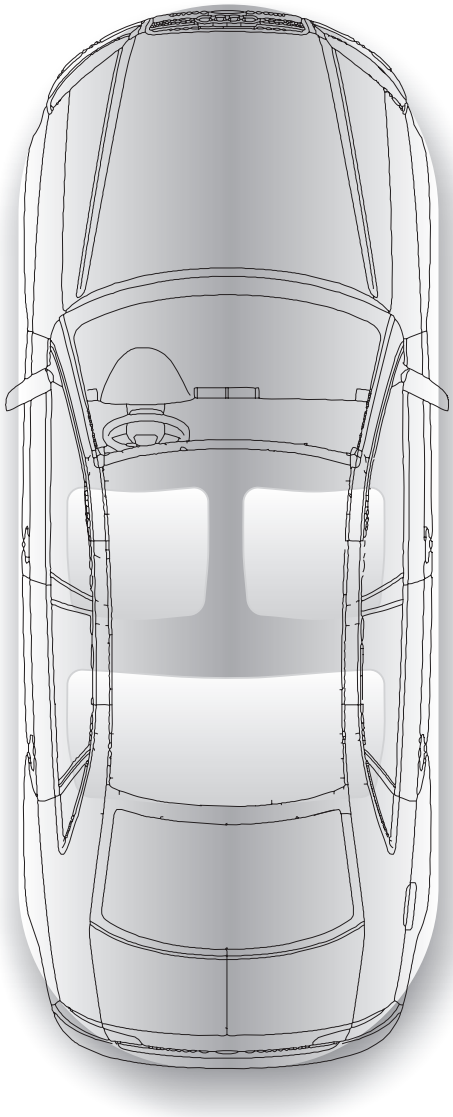
1. With built-in button, if factory PIN-code ("2") was not changed and vehicle was driven for less then 10 kilometers.
2. With built-in button and PIN-code.
3. By installing the Alarm in the same vehicle as it was installed before (if you know the PIN-code).

Sequence (for the first two ways):

1. Press and hold the built-in button.
2. Connect the power supply while holding the button. The Alarm will emit dashed audio signal.
3. Release the button and wait until the dashed signal stops.
4. If the vehicle was not driven for more then 10 kilometers, enter PIN-code "2" with built-in button. Otherwise enter PUK-code with the built-in button. A trill will be made.
5. A signal will notify you that the Alarm was reset to factory default settings.
6. Disconnect the power source.

Only owner of the system should scratch PUK-code and enter it .





Use the picture to draw arrangement of the Alarm units. This can help to find the alarm units

Keep this sketch out of the reach of third parties.

Delivery package	
Name	Quantity, pc.
Central unit	1
LED	1
–	–
A set of wiring harness	1
Siren	1
Reminder card	1
User manual	1
Warranty certificate	1
Connection diagram	1
Unit package	1

Specifications and operating conditions	
Parameter	Value
Power supply voltage, V	9 … 15
Maximum current draw in standby mode, mA	3,5
Maximum current draw in operating mode, A	1,5
Operating temperature, °C	–40 … +85
Storage temperature, °C	–40 … +85
Maximum relative air humidity, %	95